

Vladimir Y Zaitsev

List of Publications by Year in descending order

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150
papers

2,504
citations

147786

31
h-index

233409

45
g-index

156
all docs

156
docs citations

156
times ranked

1026
citing authors

#	ARTICLE	IF	CITATIONS
1	Novel nonlinear-modulation acoustic technique for crack detection. NDT and E International, 2006, 39, 184-194.	3.7	101
2	Vector method for strain estimation in phase-sensitive optical coherence elastography. Laser Physics Letters, 2018, 15, 065603.	1.4	86
3	Thermoelastic Mechanism for Logarithmic Slow Dynamics and Memory in Elastic Wave Interactions with Individual Cracks. Physical Review Letters, 2003, 90, 075501.	7.8	84
4	Optimized phase gradient measurements and phase-amplitude interplay in optical coherence elastography. Journal of Biomedical Optics, 2016, 21, 116005.	2.6	84
5	Luxemburg-Gorky Effect Retooled for Elastic Waves: A Mechanism and Experimental Evidence. Physical Review Letters, 2002, 89, 105502.	7.8	79
6	Strain and elasticity imaging in compression optical coherence elastography: The two-decade perspective and recent advances. Journal of Biophotonics, 2021, 14, e202000257.	2.3	77
7	Probing Weak Forces in Granular Media through Nonlinear Dynamic Dilatancy: Clapping Contacts and Polarization Anisotropy. Physical Review Letters, 2004, 92, 085502.	7.8	74
8	Nonlinear Response of a Weakly Damaged Metal Sample: A Dissipative Modulation Mechanism of Vibro-Acoustic Interaction. JVC/Journal of Vibration and Control, 2000, 6, 803-822.	2.6	71
9	Observation of the "Luxemburg-Gorky effect" for elastic waves. Ultrasonics, 2002, 40, 627-631.	3.9	61
10	Hybrid M-mode-like OCT imaging of three-dimensional microvasculature in vivo using reference-free processing of complex valued B-scans. Optics Letters, 2015, 40, 1472.	3.3	61
11	Practical obstacles and their mitigation strategies in compressional optical coherence elastography of biological tissues. Journal of Innovative Optical Health Sciences, 2017, 10, 1742006.	1.0	60
12	Optical coherence elastography for strain dynamics measurements in laser correction of cornea shape. Journal of Biophotonics, 2017, 10, 1450-1463.	2.3	57
13	Deformation-induced speckle-pattern evolution and feasibility of correlational speckle tracking in optical coherence elastography. Journal of Biomedical Optics, 2015, 20, 075006.	2.6	54
14	OCT-elastography-based optical biopsy for breast cancer delineation and express assessment of morphological/molecular subtypes. Biomedical Optics Express, 2019, 10, 2244.	2.9	54
15	Manually-operated compressional optical coherence elastography with effective aperiodic averaging: demonstrations for corneal and cartilaginous tissues. Laser Physics Letters, 2018, 15, 085602.	1.4	53
16	Histological validation of in vivo assessment of cancer tissue inhomogeneity and automated morphological segmentation enabled by Optical Coherence Elastography. Scientific Reports, 2020, 10, 11781.	3.3	53
17	Hybrid method of strain estimation in optical coherence elastography using combined sub-wavelength phase measurements and supra-pixel displacement tracking. Journal of Biophotonics, 2016, 9, 499-509.	2.3	48
18	Optical coherence tomography-based angiography device with real-time angiography B-scans visualization and hand-held probe for everyday clinical use. Journal of Biophotonics, 2018, 11, e201700292.	2.3	47

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19	Nonlinear Interaction of Acoustical Waves Due to Cracks and Its Possible Usage for Cracks Detection. JVC/Journal of Vibration and Control, 1995, 1, 335-344.	2.6	46
20	Photodynamic therapy monitoring with optical coherence angiography. Scientific Reports, 2017, 7, 41506.	3.3	44
21	A model for simulating speckle-pattern evolution based on close to reality procedures used in spectral-domain OCT. Laser Physics Letters, 2014, 11, 105601.	1.4	43
22	Elastographic mapping in optical coherence tomography using an unconventional approach based on correlation stability. Journal of Biomedical Optics, 2013, 19, 1.	2.6	42
23	Elastic-wave modulation approach to crack detection: Comparison of conventional modulation and higher-order interactions. NDT and E International, 2011, 44, 21-31.	3.7	41
24	Slow Relaxation and Aging Phenomena at the Nanoscale in Granular Materials. Physical Review Letters, 2014, 112, 108302.	7.8	41
25	In-vivo longitudinal imaging of microvascular changes in irradiated oral mucosa of radiotherapy cancer patients using optical coherence tomography. Scientific Reports, 2017, 7, 16505.	3.3	40
26	Pre-avalanche structural rearrangements in the bulk of granular medium: Experimental evidence. Europhysics Letters, 2008, 83, 64003.	2.0	38
27	Optical coherence tomography for visualizing transient strains and measuring large deformations in laser-induced tissue reshaping. Laser Physics Letters, 2016, 13, 115603.	1.4	36
28	Revealing structural modifications in thermomechanical reshaping of collagenous tissues using optical coherence elastography. Journal of Biophotonics, 2019, 12, e201800250.	2.3	36
29	On the ultimate sensitivity of nonlinear-modulation method of crack detection. NDT and E International, 2009, 42, 622-629.	3.7	33
30	A correlation-stability approach to elasticity mapping in optical coherence tomography. Laser Physics Letters, 2013, 10, 065601.	1.4	33
31	Luxemburg-Gorky effect in a granular medium: Probing perturbations of the material state via cross-modulation of elastic waves. Europhysics Letters, 2005, 70, 607-613.	2.0	32
32	In vivo assessment of functional and morphological alterations in tumors under treatment using OCT-angiography combined with OCT-elastography. Biomedical Optics Express, 2020, 11, 1365.	2.9	31
33	Acoustic second-harmonic generation with shear to longitudinal mode conversion in granular media. Europhysics Letters, 2004, 66, 798-804.	2.0	30
34	Pixel classification method in optical coherence tomography for tumor segmentation and its complementary usage with OCT microangiography. Journal of Biophotonics, 2018, 11, e201700072.	2.3	29
35	Full-optical method of local stress standardization to exclude nonlinearity-related ambiguity of elasticity estimation in compressional optical coherence elastography. Laser Physics Letters, 2020, 17, 065601.	1.4	29
36	Accurate early prediction of tumour response to PDT using optical coherence angiography. Scientific Reports, 2019, 9, 6492.	3.3	27

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37	Experimental Study of Nonlinear Acoustic Effects in a Granular Medium. <i>Acoustical Physics</i> , 2005, 51, 543.	1.0	25
38	Optical coherence angiography for pre-treatment assessment and treatment monitoring following photodynamic therapy: a basal cell carcinoma patient study. <i>Scientific Reports</i> , 2019, 9, 18670.	3.3	24
39	Diagnostic Accuracy of Cross-Polarization OCT and OCT-Elastography for Differentiation of Breast Cancer Subtypes: Comparative Study. <i>Diagnostics</i> , 2020, 10, 994.	2.6	24
40	Recent Trends in Multimodal Optical Coherence Tomography. I. Polarization-Sensitive OCT and Conventional Approaches to OCT Elastography. <i>Radiophysics and Quantum Electronics</i> , 2014, 57, 52-66.	0.5	23
41	Experimental evidence of ageing and slow restoration of the weak-contact configuration in tilted 3D granular packings. <i>Journal of Statistical Mechanics: Theory and Experiment</i> , 2010, 2010, P11023.	2.3	22
42	Recent Trends in Multimodal Optical Coherence Tomography. II. The Correlation-Stability Approach in OCT Elastography and Methods for Visualization of Microcirculation. <i>Radiophysics and Quantum Electronics</i> , 2014, 57, 210-225.	0.5	22
43	Analysis of low-scattering regions in optical coherence tomography: applications to neurography and lymphangiography. <i>Biomedical Optics Express</i> , 2019, 10, 4207.	2.9	22
44	Acoustic Enhancement of Surface Diffusion. <i>Journal of Physical Chemistry C</i> , 2013, 117, 9252-9258.	3.1	21
45	Title is missing!. <i>Physics-Uspexhi</i> , 2006, 49, 89.	2.2	20
46	Extracting real-crack properties from non-linear elastic behaviour of rocks: abundance of cracks with dominating normal compliance and rocks with negative Poisson ratios. <i>Nonlinear Processes in Geophysics</i> , 2017, 24, 543-551.	1.3	20
47	Optimization of phase-resolved optical coherence elastography for highly-sensitive monitoring of slow-rate strains. <i>Laser Physics Letters</i> , 2019, 16, 065601.	1.4	20
48	Interplay of temperature, thermal stresses and strains in laser-assisted modification of collagenous tissues: Speckle contrast and OCT-based studies. <i>Journal of Biophotonics</i> , 2020, 13, e201900199.	2.3	20
49	Semi-analytical full-wave model for simulations of scans in optical coherence tomography with accounting for beam focusing and the motion of scatterers. <i>Laser Physics Letters</i> , 2019, 16, 085601.	1.4	18
50	Strong enhancement of surface diffusion by nonlinear surface acoustic waves. <i>Physical Review B</i> , 2015, 91, .	3.2	16
51	Nonlinear acoustics in studies of structural features of materials. <i>MRS Bulletin</i> , 2019, 44, 350-360.	3.5	16
52	Real-Time Strain and Elasticity Imaging in Phase-Sensitive Optical Coherence Elastography Using a Computationally Efficient Realization of the Vector Method. <i>Photonics</i> , 2021, 8, 527.	2.0	16
53	Wave self-modulation in an acoustic resonator due to self-induced transparency. <i>Europhysics Letters</i> , 2006, 76, 229-235.	2.0	15
54	Extracting shear and normal compliances of crack-like defects from pressure dependences of elastic-wave velocities. <i>International Journal of Rock Mechanics and Minings Sciences</i> , 2017, 97, 122-133.	5.8	15

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55	Observation of internal stress relaxation in laser-reshaped cartilaginous implants using OCT-based strain mapping. <i>Laser Physics Letters</i> , 2020, 17, 085603.	1.4	15
56	Nonlinear Elasticity Assessment with Optical Coherence Elastography for High-Selectivity Differentiation of Breast Cancer Tissues. <i>Materials</i> , 2022, 15, 3308.	2.9	15
57	Mutually induced variations in dissipation and elasticity for oscillations in hysteretic materials: Non-simplex interaction regimes. <i>Ultrasonics</i> , 2005, 43, 699-709.	3.9	13
58	PROPAGATION OF ACOUSTICS WAVES OF NONSIMPLEX FORM IN A MATERIAL WITH HYSTERETIC QUADRATIC NONLINEARITY: ANALYSIS AND NUMERICAL SIMULATIONS. <i>Journal of Computational Acoustics</i> , 2004, 12, 319-354.	1.0	12
59	The equation of state of a microinhomogeneous medium and the frequency dependence of its elastic nonlinearity. <i>Acoustical Physics</i> , 2001, 47, 178-183.	1.0	11
60	Propagation of initially bi-harmonic sound waves in a 1D semi-infinite medium with hysteretic non-linearity. <i>Ultrasonics</i> , 2004, 42, 1053-1059.	3.9	11
61	Interaction of acoustic waves with cracks: Elastic and inelastic nonlinearity mechanisms on different time scales. <i>Acoustical Physics</i> , 2005, 51, S67-S77.	1.0	11
62	Flexible Computationally Efficient Platform for Simulating Scan Formation in Optical Coherence Tomography with Accounting for Arbitrary Motions of Scatterers. <i>Journal of Biomedical Photonics and Engineering</i> , 2021, 7, 010304.	0.7	11
63	Optical Coherence Elastography for Non-Invasive Monitoring of Tumor Elasticity under Chemotherapy: Pilot Study. <i>Sovremennyye Tehnologii V Medicine</i> , 2018, 10, 43.	1.1	11
64	Novel methods for elasticity characterization using optical coherence tomography: Brief review and future prospects. <i>Photonics & Lasers in Medicine</i> , 2014, 3, .	0.2	10
65	Giant strain-sensitivity of acoustic energy dissipation in solids containing dry and saturated cracks with wavy interfaces. <i>Journal of the Acoustical Society of America</i> , 2012, 131, 1-12.	1.1	9
66	Molecular dynamics modeling of nonlinear propagation of surface acoustic waves. <i>Journal of Applied Physics</i> , 2020, 128, .	2.5	9
67	Self-modulation of acoustic waves in resonant bars. <i>Journal of Sound and Vibration</i> , 2008, 318, 527-548.	3.9	8
68	Microstructure-induced giant elastic nonlinearity of threshold origin: Mechanism and experimental demonstration. <i>Europhysics Letters</i> , 2009, 86, 44005.	2.0	8
69	Optical Coherence Elastography as a Tool for Studying Deformations in Biomaterials: Spatially-Resolved Osmotic Strain Dynamics in Cartilaginous Samples. <i>Materials</i> , 2022, 15, 904.	2.9	8
70	Compression optical coherence elastography versus strain ultrasound elastography for breast cancer detection and differentiation: pilot study. <i>Biomedical Optics Express</i> , 2022, 13, 2859.	2.9	8
71	Nonlinear Scattering of Acoustic Waves by Discontinuity-like Defects in Application to Crack Detection. <i>JVC/Journal of Vibration and Control</i> , 1996, 2, 465-478.	2.6	7
72	Acoustic dither injection in a medium with hysteretic quadratic nonlinearity. <i>Physics Letters, Section A: General, Atomic and Solid State Physics</i> , 2003, 314, 117-125.	2.1	7

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73	Relation between the tidal modulation of seismic noise and the amplitude-dependent loss in rock. <i>Acoustical Physics</i> , 2008, 54, 538-544.	1.0	7
74	Computationally efficient model of OCT scan formation by focused beams and its usage to demonstrate a novel principle of OCT-angiography. <i>Laser Physics Letters</i> , 2020, 17, 115604.	1.4	7
75	Comparison of linear and nonlinear elastic moduli for reservoir rock by use of a granular medium model. <i>Journal of the Acoustical Society of America</i> , 1996, 99, 1360-1365.	1.1	6
76	Mechanism of acoustically induced diffusional structuring of surface adatoms. <i>Applied Physics Letters</i> , 2013, 103, 221601.	3.3	6
77	Cascade cross modulation due to the nonlinear interaction of elastic waves in samples with cracks. <i>Acoustical Physics</i> , 2008, 54, 398-406.	1.0	5
78	Scan-pattern and signal processing for microvasculature visualization with complex SD-OCT: tissue-motion artifacts robustness and decorrelation time - blood vessel characteristics. , 2015, , .		5
79	Simulating scan formation in multimodal optical coherence tomography: angular-spectrum formulation based on ballistic scattering of arbitrary-form beams. <i>Biomedical Optics Express</i> , 2021, 12, 7599.	2.9	5
80	Modulation of high-frequency seismic noise by tidal deformations: The features of the phenomenon before strong earthquakes and a probable physical mechanism. <i>Izvestiya, Physics of the Solid Earth</i> , 2011, 47, 951-965.	0.9	4
81	Transformation of the spatial-temporal spectrum of the wave field in a waveguide with a random boundary. <i>Radiophysics and Quantum Electronics</i> , 1985, 28, 47-54.	0.5	3
82	Correlation-stability approach in optical microelastography of tissues. <i>Proceedings of SPIE</i> , 2013, , .	0.8	3
83	Identification of avalanche precursors by acoustic probing in the bulk of tilted granular layers. , 2013, , .		3
84	Optical coherence elastography as a new method for estimation of chemotherapy efficacy on triple-negative breast cancer in the experiment. , 2019, , .		3
85	The Development of the Methodology of Monitoring Experimental Tumors Using Multimodal Optical Coherence Tomography: the Choice of an Optimal Tumor Model. <i>Sovremennye Tehnologii V Medicine</i> , 2015, 7, 6-15.	1.1	3
86	Parameters of Acoustic Inhomogeneity for Nondestructive Estimation of the Influence of Manufacturing Technology and Operational Damage on the Structure of Metal. <i>Russian Journal of Nondestructive Testing</i> , 2020, 56, 971-983.	0.9	3
87	Dissipation and dispersion properties of microinhomogeneous media. <i>Acoustical Physics</i> , 2000, 46, 295-301.	1.0	2
88	Correlation-stability elastography in OCT: algorithm and in vivo demonstrations. , 2013, , .		2
89	An approach to OCT-based microvascular imaging using reference-free processing of complex valued B-scans. , 2015, , .		2
90	Optimization of phase-variation measurements in low-coherence methods: implications for OCE. , 2016, , .		2

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91	Vessel-contrast enhancement in label-free optical coherence angiography based on phase and amplitude speckle variability. , 2016, , .		2
92	Monitoring of slow deformations in laser tissue reshaping with optical coherence elastography. , 2018, , .		2
93	OCT-based characterization of the nonlinear properties of biological tissues in various states. , 2018, , .		2
94	Multimodal OCT characterization of human breast cancer morphological types: preliminary study. , 2018, , .		2
95	Characterization of elastic nonlinear properties of the tissues using compressional optical coherence elastography. , 2020, , .		2
96	Determining morphological structuresâ€™ stiffness values of tumor tissue by optical coherence elastography. , 2020, , .		2
97	Multimodal optical coherence tomography for quantitative diagnosis of breast cancer subtypes. , 2020, , .		2
98	Optical Coherence Tomography Angiography and Attenuation Imaging for Label-Free Observation of Functional Changes in the Intestine after Sympathectomy: A Pilot Study. Photonics, 2022, 9, 304.	2.0	2
99	Publisherâ€™s Note: Probing Weak Forces in Granular Media through Nonlinear Dynamic Dilatancy: Clapping Contacts and Polarization Anisotropy [Phys. Rev. Lett.92, 085502 (2004)]. Physical Review Letters, 2004, 92, .	7.8	1
100	Probing Granular Media via Nonlinear Acoustic Effects. AIP Conference Proceedings, 2005, , .	0.4	1
101	Self-demodulation of acoustic pulses in partially water-saturated river sand. Acoustical Physics, 2006, 52, 301-306.	1.0	1
102	To the problem of stiffness-contrast quantification in the correlation-stability approach to OCT elastography. Proceedings of SPIE, 2014, , .	0.8	1
103	Real time OCT-based angiography device with hand-held probe (Conference Presentation). , 2017, , .		1
104	Multiparameter thermo-mechanical OCT-based characterization of laser-induced cornea reshaping. Proceedings of SPIE, 2017, , .	0.8	1
105	Manifestations of nonlinear elasticity of biological tissues in compressional optical coherence elastography. Proceedings of SPIE, 2017, , .	0.8	1
106	Multimodal OCT for complex assessment of tumors response to therapy. , 2017, , .		1
107	OCT-based label-free 3D mapping of lymphatic vessels and transparent interstitial-fluid-filled dislocations. , 2018, , .		1
108	Comparison of elastic properties of tissue samples in various pathological states using optical coherence elastography. , 2019, , .		1

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109	Compressional optical coherence elastography for performing histology-like assessment of breast cancers. , 2019, , .		1
110	Thermo-mechanical mechanism of laser-induced pore-formation in sclera for glaucoma treatment: AFM and OCT investigations. , 2018, , .		1
111	Phase-sensitive OCT in monitoring of slow-rate strains in laser tissue reshaping. , 2019, , .		1
112	OCT lymphangiography based on speckle statistics evaluation. , 2019, , .		1
113	Optical coherence angiography monitoring of tumor early response to PDT in experimental and clinical studies. , 2019, , .		1
114	Optical coherence elastography for characterization of natural interstitial gaps and laser-irradiation-produced porosity in corneal and cartilaginous samples. , 2020, , .		1
115	Multimodal OCT for Malignancy Imaging. , 2020, , 425-464.		1
116	Assessment of human breast cancer margins by compressional optical coherence elastography. , 2020, , .		1
117	Novel Elastography-Inspired Approach to Angiographic Visualization in Optical Coherence Tomography. Photonics, 2022, 9, 401.	2.0	1
118	Methods for calculation of the fields of parametric acoustic arrays in oceanic waveguides. Radiophysics and Quantum Electronics, 1993, 36, 504-509.	0.5	0
119	<title>Collective effects in the coherent spontaneous emission of extended ensemble of excited quasi-classical oscillators</title>. , 1996, 2798, 21.		0
120	<title>Linear mode coupling and polarization statistics of coherent light in twisted single-mode fibers with random inhomogeneities</title>. , 1997, , .		0
121	Nonlinear-Acoustic Damage Detection in Solid Samples : Comparison Between Conventional Modulation Technique and Double-Modulation. AIP Conference Proceedings, 2008, , .	0.4	0
122	Nonhysteretic Nonlinear Losses at Intergrain Contacts in Rocks: Application to Tidal Modulation Phenomena in Seismics. AIP Conference Proceedings, 2008, , .	0.4	0
123	Giant strain-sensitivity of local acoustic dissipation near inner wavy contacts in dry and fluid-saturated cracks. , 2012, , .		0
124	Application of nonlinear acoustics for the study of relaxation processes in granular materials. , 2012, , .		0
125	Combining the correlation-stability approach to OCT elastography with the speckle-variance evaluation for quantifying the stiffness differences. Proceedings of SPIE, 2014, , .	0.8	0
126	Towards free-hand implementation of OCT elastography: displacement-based approaches versus correlation-stability ones. Proceedings of SPIE, 2014, , .	0.8	0

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127	Robust strain mapping in optical coherence elastography by combining local phase-resolved measurements and cumulative displacement tracking. , 2016, , .		0
128	OCT-based approach to local relaxations discrimination from translational relaxation motions. Proceedings of SPIE, 2016, , .	0.8	0
129	Multimodal OCT for assessment of vasculature-targeted PDT success. , 2017, , .		0
130	Quasistatic in-depth local strain relaxation/creep rate mapping using phase-sensitive optical coherence tomography. , 2017, , .		0
131	Quantitative Mapping of Strains and Young Modulus Based on Phase-Sensitive OCT. , 2020, , .		0
132	Spatially-resolved slow dynamics of strains due to residual stresses in cartilaginous implants visualized by phase-sensitive optical coherence tomography. , 2021, , .		0
133	Avoiding biases of geometric crack representations in rocks. , 2021, , .		0
134	An approach to OCT-based microvascular imaging using reference-free processing of complex-valued B-scans. , 2015, , .		0
135	Optical coherence elastography assesses tissue modifications in laser reshaping of cornea and cartilages. , 2018, , .		0
136	Quantitative compressional OCE: obviating pitfalls in using pre-calibrated compliant layers and some other practical obstacles. , 2018, , .		0
137	Two-dimensional OCT-relaxography of collagenous tissues. , 2018, , .		0
138	Development of real-time multimodal OCT with manual operation capabilities and emergence of its applications in clinical practice. , 2019, , .		0
139	OCT-based three-dimensional strain mapping for elastography and relaxography. , 2019, , .		0
140	Assessment of optical coherence tomography speckle patterns in low-scatterer-concentration regions: simulations for lymphatic vessels mapping. , 2019, , .		0
141	Optical coherence elastography for visualization of spatio-temporal strain dynamics in thermo-mechanical modification of corneal and cartilaginous tissues. , 2019, , .		0
142	OCT-based strain mapping and compression optical coherence elastography to study and control laser-assisted modification of avascular collagenous tissues. , 2020, , .		0
143	Compressional optical coherence elastography as a tool for feasible in vivo histology-like morphological segmentation of cancer-tissue constituents. , 2020, , .		0
144	Semi-analytical full-wave model of OCT-scan formation for various degrees of OCT-beam focusing with implication of motion of scatterers. , 2020, , .		0

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145	Assessing Crack-Induced Compliance in Low Porosity Rocks Damaged by Thermo-Hydro-Chemo-Mechanical Processes. Journal of Geophysical Research: Solid Earth, 2021, 126, e2021JB023217.	3.4	0
146	Why apparent contrast in elasticity of biological tissues is noticeably different for compression ultrasound elastography and OCE. , 2022, , .		0
147	Monitoring of blood and lymph circulation in the denervated small intestine based on multimodal optical coherence tomography data. , 2022, , .		0
148	Mapping large strains and supra-pixel displacements in phase-sensitive OCT. , 2021, , .		0
149	Improvement of breast cancer histological examination by means of multimodal OCT. , 2021, , .		0
150	Computationally efficient spectral model of OCT-scan formation with easily accounted scatterer motions for simulating multimodal OCT. , 2021, , .		0